

milked by an automated milking machine and cubicles are provided wherein the cows are fed and may rest between milkings. Automated milking of animals, usually cows, is a significant step forward for the dairy farm industry. It is comparable to other prior advances in the dairy farm industry which have had a substantial impact on the operations of dairy farming. Perhaps the first such significant step resulted from the invention of the railroads. Before railroads, most dairy farms were located closely adjacent to cities and towns or actually within larger cities such as London. With the advent of the railroad, it became possible to move the dairy farms farther away from the towns and cities and to use the railroad to transport milk to dairy processing plants which were in or closely adjacent to the cities and towns. Another significant step forward was the automatic milking machine which, when eventually perfected, permitted dairy cows to be milked by the milking machines rather than manually, thereby greatly reducing the amount of manual labor required for milking. Subsequent to World War II the bulk milk tank system together with bulk milk tank trucks were introduced. Before this, milk cans were set out to be picked up daily by milk trucks which replaced them by used milk containers from the local dairy. With the bulk milk system, milk was routed by conduits from the milking machines into relatively large refrigerated milk tanks from which the bulk milk tank trucks would pick up milk usually once every other day and carry it to the local dairies. This system avoided the manual handling of the milk cans and improved the means for cooling the milk almost immediately after it had been taken from the cows via milking machines. Each of these improvements spawned numerous other improvements and inventions which were incidental to the milking process relating to such things as the testing of milk immediately after it had been received from the cow, automatic cleaning of the milk conduits and the bulk milk tanks and different types of milk tanks as well as parts such as claws, teat cups, etc. However, even with modern milking equipment

and methods, the process of milking dairy cows remained labor intensive. Thus although it was known that by milking the cows three times a day rather than twice a day led to greater milk productivity, because of the labor cost only a few dairy farms would milk three times a day. It was said that one could always recognize the dairy farm families at a Sunday church picnic because they were always the ones to leave at about 3:00pm or 3:30pm, it being customary to milk the cows at 4:00am and again at 4:00pm every day. But this is in the process of being changed by the automated milking system. In such system, the cows, in effect, decide individually when they desire to be milked whereupon they go to a milking compartment. While a cow is in the milking compartment, a detector, usually a laser detector, determines the positions of the individual teats and then teat cups are automatically applied by robotic arms to the cow's teats which are then milked. The teat cups are automatically removed at the end of the milking session and the cow, having been milked, leaves the milking compartment. If a cow attempts to enter a milking compartment before it should be again milked, either it will not be allowed to enter the milking compartment or if allowed not be milked. With such systems the cows are usually milked three or more times a day and the milk productivity per cow is increased substantially. However, where the dairy farmer or other farm labor had to be, by necessity, in close contact with the dairy cattle and their environment at least twice or more per day, this is no longer requisite and as the automated robotic milking system is improved and becomes increasingly reliable, the need for dairy farmers and operators to be present in the stanchion barns and milking parlors where the cows are milked is no longer vital. Thus robots and robotic processes for purposes such as cleaning up the stables and the feeding of the animals are being introduced. This is also true with mechanisms for determining the wholesomeness of the milk as

it is received from the cows and otherwise checking on the physical health of the cows such as taking their temperatures, recording their heartbeats and so forth.

The instant invention is directed to ensuring that stables (cowsheds or milking parlors or stanchion barns or other enclosures wherein the cows are milked and may remain for substantial lengths of time) are comfortable and healthy. The instant invention is directed to an unmanned vehicle for stables or their equivalents which provides information concerning the climate within the stable that is important to the well being of the animals therein. Thus in Figure 2, an unmanned mobile vehicle is shown which has four sensors which are carried at a uniform distance above the stable floor. These comprise a temperature sensor, an air velocity sensor, a gas sensor, and an air humidity sensor. The unmanned vehicle also carries on an elevating means which carries six sensors, four of which are those which are the same as those carried at a uniform distance above the stable, plus a light intensity sensor and an air pressure sensor. The information from such sensors is recorded in a computer and relayed to where it can be read by the dairy farmer or operator. Insofar as can be determined, this use of an unmanned vehicle with sensors mounted thereon for determining the climate conditions within a stable in accordance with the invention is not known from the prior art.

In the Official Action, except for the rejection of Claims 1 and 2 based on 35 U.S.C. §112 and which, it is submitted, is overcome by the instant Amendment, all of the claims have been rejected in one form or another under 35 U.S.C. §103 based on U.S. Patent No. 4,218,755 of Root for weather forecasting apparatus, in view of a further reference or references which includes for most claims U.S. Patent No. 4,968,878 of Pong et al. For Claim 20, U.S. Patent No. 6,312,507 to Taylor et al has been applied. For Claims 31 and 32, U.S. Patent No. 5,178,010 to

Holzel has been added. For Claims 38-41, U.S. Patent No. 5,474,085 to Hurnik et al has been added. And for Claims 43-46, U.S. Patent No. 5,008,821 to Pratt et al has been used.

Essentially the rejections are based on the premise that unmanned vehicles such as disclosed in the patent to Pong et al are well known and that the use of a variety of sensors as disclosed in the patent to Root and other references is old, whereupon the combination of an unmanned vehicle together with a variety of sensors for determining the climate within a stable is an obvious combination. But the prior art fails to disclose any sufficient basis for finding the combinations obvious within the meaning of 35 U.S.C. §103. Most, if not all, inventions arise from a combination of old elements. Thus it is not uncommon, but almost universal, that every element of the claimed invention can be found in the prior art. However, identification of the prior art of each individual part claimed is insufficient to defeat patentability of the whole claimed invention. Rather, to establish obviousness based on a combination of elements disclosed in the prior art, there must be some motivation, suggestion or teaching of the desirability of making the specific combination that was made by the Applicant. Indeed, even when an allegation of obviousness is based on a single prior art reference, there must be a showing of a suggestion or motivation to modify the teachings of that reference. Usually, the motivation, suggestion or teaching is provided explicitly from statements in the prior art. However, it may be based on the existing knowledge of one of ordinary skill in the art or, in some cases, on the nature of the problem to be solved. It is thus possible that the teaching, motivation or suggestion may be implicit from the prior art as a whole rather than expressly stated in the references. However reliance must be predicated upon express or implicit showings, and particular findings related thereto must be provided. Broad conclusory statements standing alone are not "evidence" for this purpose. The requirement for express or implicit

showings exists because simply rejecting claims solely by finding prior art corollaries for the claimed elements would permit an Examiner to use the claimed invention itself a blueprint for piecing together elements in the prior art to defeat the patentability of the claimed invention. To counter this potential weakness in the obviousness construct, the requirement for evidence of a suggestion to combine stands as a critical safeguard against hindsight analysis and rote application of the legal test of obviousness.

Applicant does not contest that unmanned vehicles which are used in stables or the like are known in the art and, indeed, it is noted in the background of the invention in the Specification that known unmanned vehicles are usually employed for cleaning stable floors.

The weather forecasting apparatus of Root requires manual inputting. Also, statements to the contrary in the Official Action notwithstanding, it borders on the ridiculous to conclude that Root intended or anyone else would recognize his weather forecasting apparatus as being appropriate to determine the climate within a stable. Root is considering different regions, that is ~~different~~ areas generally representing different land mass topographies with specific dividing lines. These areas are many orders of magnitude greater than an area within a stable. Yet further, Root is concerned with weather outdoors, not weather within the confines of any specific enclosure. Yet further, there is no suggestion that the apparatus of Root would be properly mounted on or combined with an autonomous mobile vehicle as disclosed in the patent to Pong et al. It is submitted that the situation is not a close one. The cited prior art simply does not lead to the combinations claimed by Applicant in the instant Application either explicitly or implicitly to satisfy the requirements of 35 U.S.C. §103. The further citation of Taylor to show a detector for ammonia certainly does not suggest the inclusion of an ammonia detector or gas detector on

the apparatus to Root which, in turn, does not suggest the placement of climate sensors for sensing the climate within a stable on an unmanned vehicle.

More of a case might be advanced for incorporating in the Root apparatus an alarm system together with a barometer, but the circumstance that Root does not include an alarm system seems to lead away from, not towards, such a combination.

Concerning the Hurnik et al reference, animal identification systems, as such, are old. They have long been used for regulating the feed provided to specific animals whereby the animals are often more healthy than would otherwise be the case and, incidentally, the feed bill is less. But to suggest that an animal identification system should be incorporated in the apparatus of Root or the unmanned vehicle of Pong et al is highly speculative and does not meet the criteria required to find obviousness under 35 U.S.C. §103.

The above remarks also apply to the use of Pratt et al as a reference. Pratt et al teaches the use of considering weather history in determining the feed for cattle in a pen, not for individual animals. However, even if it taught the latter, it certainly fails to teach the combination of same with either Pong et al or Root or any combination thereof.

In summary, Applicant teaches the use of an unmanned vehicle with a plurality of sensors thereon to sense the "climate" within a stable or its equivalent and that concept is quite novel and not taught by the references of record. Although the prior art collected and cited by the Patent Examiner suggests careful and extensive research, this cannot change the fact that the reasons stated in the Official Action for making the combinations are conclusionary and without sufficient basis for a suggestion or motivation or teachings of the prior art leading thereto. Accordingly, a withdrawal of the rejections appears to be in order and, upon reconsideration, is respectfully requested.

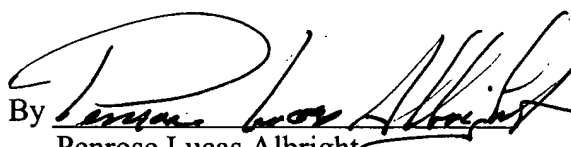
By this Amendment, one (1) independent claim and two (2) additional claims have been introduced whereby an additional fee of \$60.00 appears to be required. Our check to cover same is submitted herewith. If, however, this is in error, the Commissioner of Patents and Trademarks is authorized to credit or debit our Account No. 13-2000 as appropriate.

Further consideration and reexamination of this Application, in its amended form, is requested in view of 35 U.S.C. §132 and regulations in implementation thereof. It is submitted that the Application in its amended form is free from ambiguity and avoids the references of record. It is further submitted the Examiner should have no difficulty in finding that the differences between the subject matter sought to be patented in this Application and prior art and usage within the Examiner's expert knowledge are such that subject matter as a whole would not have been obvious at the time the invention was made to persons having ordinary skill in the art to which the subject matter of this Application pertains.

In view of the foregoing, an allowance of claims as now presented is earnestly solicited.

Respectfully submitted,

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